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BEFORE THE
POSTAL REGULATORY COMMISSION
WASHINGTON, DC

STATUTORY REVIEW OF THE SYSTEM FOR REGULATING RATES AND CLASSES FOR MARKET DOMINANT PRODUCTS	Docket No. RM2017-3

COMMENT OF THE
NATIONAL ASSOCIATION OF LETTER CARRIERS, AFL-CIO

Pursuant to the Commission's December 20, 2016 advanced notice of proposed rulemaking in the above case, the National Association of Letter Carriers, AFL-CIO ("NALC") hereby submits this comment regarding what changes, if any, the Commission should make to the current market dominant rate regulation system.

NALC submits that of the nine objectives the Commission must consider under the Postal Accountability and Enhancement Act ("PAEA"), the Commission should give paramount consideration to Objective #5, namely, assuring adequate revenues to the United States Postal Service ("USPS") so that it can maintain financial stability. Without adequate revenues, USPS cannot fulfill its fundamental mission of providing prompt and reliable postal delivery to communities throughout the United States. Indeed, without adequate revenues and financial stability, USPS cannot achieve the other objectives set forth in the statute.

Furthermore, NALC contends, to assure that the market dominant rate regulation system achieves Objective #5, the Commission should eliminate the current price cap on market dominant products. Eliminating the price cap is well within the Commission's authority. The PAEA gives the Commission, in its 10-year review, broad power not only to modify but also to entirely replace, the current rate regulation system.

The Commission should eliminate the price cap because, with the decline of mail volume, the cap, which is based on the Consumer Price Index for Urban Consumers ("CPI-U"), does not allow USPS to price its market dominant products high enough to cover its costs or meet other statutory obligations. The experience of the last ten years has dramatically demonstrated the inadequacy of the CPI-U price cap. Even with extensive cost-cutting and marked productivity improvements, and even with a substantial revenue boost from the exigent rate increase, USPS under the price cap has been unable to achieve financial "stability" within the meaning of the PAEA. While it generated operating profits in FY2014, FY2015 and FY2016, it was nonetheless unable to meet all of its financial obligations under the statute. The lack of revenue has induced USPS to pursue an ultimately self-defeating strategy of saving money by reducing service standards, cutting Post Office hours, eliminating collection boxes, and delaying the replacement of an aging fleet of vehicles. Indeed, since 2007, USPS has been reducing service quality and allowing its operations to deteriorate in order to live within an artificially stringent price cap. To restore the USPS's long-term viability, the Commission should eliminate the CPI-U price cap.

In place of the CPI-U price cap, the Commission should implement a system for regulating market dominant rates that allows USPS to charge prices that -- while still reasonable and fair -- would generate enough revenue for USPS to achieve the financial stability it needs to continue to fulfill its mission of providing prompt, reliable and universal service.

In addition, regardless of what action the Commission takes on the price cap, NALC urges the Commission to permit USPS to file a one-time "true up" rate case, to allow USPS to bring market dominant rates to a point consistent with a moderate operating profit. Such a "true up" case is essential to allow USPS to reset prices to a level that will provide it financial stability.

I. IN ITS REVIEW, THE COMMISSION SHOULD GIVE PARAMOUNT CONSIDERATION TO OBJECTIVE #5, NAMELY, ASSURING ADEQUATE REVENUES FOR USPS TO MAINTAIN FINANCIAL STABILITY

As its fundamental mission, USPS has "the obligation to provide postal services to bind the Nation together" through correspondence, and to "provide prompt, reliable, and efficient services to patrons in all areas" and to "all communities." 39 U.S.C. §101(a). Ensuring that USPS can fulfill this cornerstone obligation should be the foremost goal of the Commission's 10-year review of the system for regulating rates of market dominant products.

The PAEA sets forth nine objectives that the system should aim to achieve. *See* 39 U.S.C. §§3622(b), (d)(3). Yet, one objective -- Objective #5 -- necessarily has paramount importance. Objective #5 provides that the rate system should be designed to "assure adequate revenues" so that USPS can "maintain financial stability." *Id*. §3622(b)(5). Without adequate revenues, USPS cannot fulfill its core mission. It cannot effectively bind together the nation with prompt, reliable and efficient postal service to every community in the United States. Nor, without adequate revenue, can USPS achieve the other objectives set forth in the statute. Given the critical importance of USPS's financial stability, NALC focuses its comment -- and urges the Commission to focus its review -- on Objective #5.

II. BECAUSE THE CURRENT PRICE CAP IS INCONSISTENT WITH THE ACHIEVEMENT OF OBJECTIVE #5, THE COMMISSION SHOULD ELIMINATE IT

In this proceeding, the Commission should determine that the current market dominant rate regulation system is failing to achieve the objectives set forth in the PAEA. In particular, it should conclude that current price cap is inconsistent with the achievement of Objective #5.

A. Given the Decline in Mail Volume, the Current Price Cap Does Not Allow USPS to Charge Prices High Enough to Cover Its Costs or Generate Adequate Revenue

1. OIG Analysis

Reports by the USPS Office of Inspector General ("OIG") demonstrate the inadequacy of the PAEA price cap. A 2013 OIG report explained that USPS's financial viability under the price cap is highly dependent on mail volume. *See* OIG, "Revisiting the CPI-Only Price Cap Formula," Report No. RARC-WP-13-007 (April 12, 2013), at ii. An unstated assumption of the price cap, the OIG noted, was that volume would remain stable or grow. *See id*. at 3. When Congress established the price cap in 2006, mail volume was growing. *See id*. at ii. But mail volume has steeply declined since 2008, and, at the same time, the number of delivery points has grown, and these trends are likely to persist. As a result, each piece of mail now has to cover an ever increasing share of the institutional costs of USPS's delivery network. *See id*. at iii-iv. Yet, the CPI-U price cap has imposed an extremely low ceiling on price increases for market dominant products. It simply does not allow USPS to generate enough revenue to cover its costs.

A 2011 OIG report concluded that

> [t]he price cap structure for market dominant products is showing signs of strain. Since 2000, cumulative unit costs for three of the four market dominant mail classes (Periodicals, Standard Mail, and Package Services) have far outpaced increases in the Consumer Price Index (CPI-U). Even First-Class Mail unit costs, which have historically tracked closely with CPI-U, are rapidly increasing as volumes decline. This is resulting both in an increasing inability to cut enough cost to enable revenue to cover expenses as well as a potential increase in the number of products that are unable to cover their costs.

See OIG, "The Cost Structure of the Postal Service: Facts, Trends, and Policy Implications," Report No. RARC-WP-11-007 (July 20, 2011), at ii. In 2013, the OIG concluded that, when combined with other problems, the current price cap "imperils the Postal Service's financial viability." "Revisiting the CPI-Only Price Cap Formula," at iv. Indeed, according to the OIG, "a

financial failure is likely in the medium to long term under the price cap as it is presently structured, even if Congress provides substantial short-term assistance and the Postal Service makes significant gains in efficiency." *Id*. at iii.

2. **Cohen, McBride and Waller Analysis**

A report by postal experts Robert Cohen, Charles McBride and John Waller confirms the OIG's conclusions about the inadequacy of the CPI-U price cap.[1] Cohen and McBride wrote a report in 2010 in which they concluded that if mail volume declined to projected levels, the CPI-U price cap "will not permit the Postal Service to remain financially sustainable." *See* R. Cohen, C. McBride, "Implications of Declining Mail Volumes for the Financial Sustainability of the Postal Service," OIG Report No. RARC-WP-10-006 (Sept. 29, 2010), at 6.

At NALC's request, Cohen, McBride and Waller updated the 2010 report in a paper they issued in March 2017. (A copy of their March 2017 paper is attached here as Exhibit A). The authors note that "despite an improved volume outlook and greater than expected success by USPS in reducing costs," they reach a "similar conclusion" in 2017 to that Cohen and McBride reached in their 2010 paper. Exhibit A at 14. In particular, the March 2017 paper concludes that USPS needs to increase market dominant prices at a rate above inflation just to break even and to satisfy its legal obligations. *See id*. at 2.

In the authors' view, however, breaking even is not enough: to attain financial stability, USPS "should earn a margin over breakeven of about 5.0 percent of sales." Exhibit A at 2. According to Cohen, McBride and Waller, USPS needs such a margin -- which would be small compared to those of most large American firms -- "for capital improvements, retiring its

[1] Robert Cohen served as Director of the Office of Technical Analysis of the Postal Rate Commission. Charles McBride was Deputy Director of the Postal Rate Commission's Office of Technical Analysis. John Waller was the Director of the Postal Regulatory Commission's Office of Accountability and Compliance.

debt to the Treasury and as a buffer in case of an economic downturn or other events that could cause an acceleration of the decline in Market Dominant volume." *Id.*[2]

B. Experience Since 2006 Has Shown that the Current Price Cap Fails to Generate Adequate Revenue for USPS

Experience since the PAEA's enactment in 2006 demonstrates that the CPI-U price cap has thwarted USPS's ability to achieve financial stability. USPS has made significant strides containing and reducing its costs in the last decade, and making the most of its limited resources. Since FY 2006, USPS has reduced its total expenditures by $13.7 billion (adjusted for inflation), mostly from labor cost savings. *See* OIG, "Peeling the Onion: The Real Cost of Mail," Report No, RARC-WP-16-009," (April 18, 2016), at 2. It has made deep cuts in its career workforce, from approximately 696,000 employees in 2006 to 492,000 in 2015. *See id*. at 8 n.19. USPS has also achieved a significant increase in productivity. *See id*. In addition, as a result of the Commission's approval of the exigent price increase to help USPS adjust to the permanent decline in mail volume caused by the Great Recession, USPS earned an additional $4.6 billion in revenue. *See* Commission Order 2623, Docket No. R2013-11R (July 29, 2015), at 55.

Yet, despite all this, over the last decade, the revenue produced under the CPI-U cap has still proven inadequate. *See* OIG, "Funding the Universal Service Obligation," Report No. RARC-WP-16-005," (March 21, 2016), at 1 (OIG concluded that, with declining mail volume, the price cap "has challenged" USPS's ability to "earn sufficient revenues").

Lacking adequate revenue, USPS has forgone making required retiree health pre-funding payments. From 2007 to 2016, USPS was required by law to make a total of $51.8 billion in retiree health pre-funding contributions, but during that period, it contributed a fraction

[2] The "rollforward model" and "volume calculations" referenced in the appendices to the Cohen, McBride, Waller paper are not included here, but are available from NALC upon request.

of that amount, $17.9 billion. Since 2010, USPS has failed to make any of the statutorily required pre-funding contributions.[3]

Even without making the required pre-funding payments, USPS, under the CPI-U price cap, has lacked the resources needed to maintain a stable level of operations. By the end of 2012, USPS had reached its $15 billion borrowing limit. *See* USPS 2012 Form 10-K, at 10. With its borrowing authority exhausted, and with no access to capital markets, USPS's only remaining source of liquidity has been its thin cash cushion. In 2016, USPS's cash on hand amounted to less than 30 days of operating disbursements. *See* Open Session, USPS Board of Governors, Temporary Emergency Committee Meeting (Nov. 15, 2016), at 11. The lack of liquidity makes USPS extremely vulnerable. With such limited cash reserves, USPS would be unable to weather a severe economic downtown or a crisis in the delivery market.

To save money, USPS has closed hundreds of Post Offices and drastically cut retail hours at thousands of others. *See* U.S. Government Accountability Office ("GAO"), "U.S. Postal Service: Post Office Changes Suggest Cost Savings, but Improved Guidance, Data, and Analysis Can Inform Future Savings Efforts," GAO-16-385 (April 2016), at 9, 12 (GAO noted that from 2012 to 2014, USPS reduced hours at 9,159 Post Offices); GAO, "U.S. Postal Service: Challenges Related to Restructuring the Postal Service's Retail Network," GAO-12-433 (April 2012), at 1 (GAO noted closure of 651 Post Offices in five years prior to 2012). USPS has also eliminated thousands of its collection boxes, prompting complaints from customers. *See* OIG, "Collection Box Removal Process - Eastern Area," Report No. DR-AR-16-007 (Aug. 22, 2016), at 1 (OIG noted removal of over 12,000 collection boxes in five years prior to 2016).

[3] In this 10-year review, the Commission should not -- and, indeed, has no authority to -- assume that Congress will provide USPS any relief from the retiree health pre-funding requirement or make any other changes to the legislative regime under which USPS operates. Nonetheless, NALC notes here its position that Congress should abolish the pre-funding contribution requirement, since that requirement imposes a unique and undue burden on USPS's finances.

In other cost saving measures, USPS has closed nearly a third of its mail processing facilities (143 out of 461) and also relaxed its service standards, increasing the number of days it takes to deliver First-Class Mail and periodicals. *See* GAO, "U.S. Postal Service: Information on Recent Changes to Delivery Standards, Operations, and Performance," GAO-14-828R-Postal Delivery (Sept. 26, 2014), at 3, 9-10. USPS has lacked the capacity even to meet these relaxed service standards, resulting in a substantial increase in delayed mail. *See* OIG, "Management Alert -- Substantial Increase in Delayed Mail," Report No. NO-MA-15-004 (Aug. 13, 2015), at 1-2 (OIG found 494 million pieces of delayed mail in six months following the January 2015 service standard changes); *see also* OIG, "Timeliness of First-Class Mail Flats; Audit Report," Report No. NO-AR-17-001 (Oct 6, 2016), at 1 (OIG found ongoing failure by USPS to meet its delivery target goals for First-Class Mail flats).[4]

By depriving USPS of needed revenue and thereby inducing it to cut the quality and availability of its services, the CPI-U price cap has created the risk of driving away postal customers. Indeed, the OIG found that many customers it surveyed cited service and operations issues as key factors in their decision to reduce or eliminate their business with USPS. *See* OIG, "Customer Retention," Report No. MS-AR-14-008 (Sept. 25, 2014), at 2. Delayed mail is an example. As the OIG has explained, "[w]hen mail is delayed, it increases the risk of customers losing confidence in the Postal Service's ability to provide trusted and reliable service. This could directly harm the Postal Service's brand, lead customers to seek alternative delivery options or use digital alternatives, and ultimately reduce revenue." OIG, "Timeliness of First-Class Mail Flats," Report No, NO-AR-17-001" (Oct 6, 2016), at 2.

Moreover, USPS's cost-cutting strategy can only go so far. Having already made extraordinary reductions in the number of its Post Offices, processing facilities, retail hours and

[4] To the extent that the current price cap has led to slower or delayed mail, it is not only inconsistent with Objective #5, but also Objective #3: "maintain[ing] high quality service standards." 39 U.S.C. §3622(b)(3).

collection boxes, and having already substantially degraded its service standards, USPS cannot continue to push those reductions further without doing real and lasting harm to its business. The steps USPS has already taken to cope with the CPI-U price cap cannot be repeated.

The constraints of the CPI-U price cap have not only pushed USPS to cut the quality and availability of its services, but have also prevented it from making needed expenditures to repair, maintain and upgrade its operations. For example, most of USPS's delivery vehicles are nearing or have exceeded their expected service life, yet financial constraints have prevented USPS from implementing plans to replace them. *See* OIG, "Delivery Vehicle Fleet Replacement," Report No. DR-MA-14-005 (June 10, 2014), at 1. Data from USPS's 10-K reports show that, as a result of its aging fleet, USPS's vehicle maintenance costs have soared, increasing by over 55%, from $402 million per year in 2006 to $624 million in 2016.

Aging vehicles are just part of the problem. Under the CPI-U price cap, USPS has lacked the resources it needs to maintain its facilities and operations. In 2012, USPS's capital commitments were the lowest since 1988. *See* USPS 2012 Form 10-K, at 50. In 2013, USPS noted that it was limiting capital spending to "below average historical levels" in order to conserve cash, giving priority to those capital projects that were either required by legal, safety or health reasons or for customer service, or that provided a high return on investment and a short payback period. *See* USPS 2013 Form 10-K, at 47. A November 2013 OIG report found that USPS has been unable to complete many thousands of needed repairs, including repairs that affect safety and security:

> Budget constraints have affected the Postal Service's ability to fund repairs, alterations, and capital improvements. In FY 2012, the Postal Service spent $266 million (29 percent) below the industry average on facility repairs -- spending $2.69 per square foot versus $3.81 per square foot. As a result, during FYs 2011 and 2012, Facilities did not complete 19,033 repairs (18 percent) estimated to cost $271 million. *Fifty percent of these incomplete repairs represented safety, security, and potential future major*

> *repairs*. Future costs of these unfunded repairs could reach $1.4 billion.

See OIG, "Spending Trends for Maintaining Postal Facilities," Report No. SM-AR-14-002 (Nov. 27, 2013), at 1 (emphasis added).

As the OIG has noted, USPS's level of capital expenditure "pales in comparison to that of its competitors." OIG "Peeling the Onion," at 2. While USPS had substantially higher revenue than both UPS and FedEx from FY 2006 to 2014, its total capital expenditures, $13 billion, fell well behind FedEx's $25.5 billion and UPS's $18.5 billion. *See id.* Chart 1 below shows USPS's relatively paltry annual capital expenditures, measured as a percentage of revenue, compared to these two competitors:

Chart 1:

Year	UPS CapEx as % of Revenue	FDX CapEx as % of Revenue	USPS CapEx as % of Revenue
2007	5.7%	8.2%	3.6%
2008	5.1%	7.8%	2.7%
2009	3.5%	6.9%	2.7%
2010	2.8%	8.1%	2.1%
2011	3.8%	8.7%	1.8%
2012	4.0%	9.4%	1.1%
2013	3.7%	7.6%	1.0%
2014	4.0%	7.8%	1.2%
2015	4.1%	9.2%	1.8%
2016	4.9%	9.6%	2.0%
2017 E	6.0-7.0%	9.3%	2.5%

USPS Average:	2.0%

Sources
2006-2016: USPS Annual Reports, UPS Annual Reports, FedEx Annual Reports
2017 forecasts: USPS Integrated Financial Plan FY 2017, UPS February 21, 2017 press release "UPS Accelerates Transformation of Its Smart Logistics Network", FedEx Q2 FY17 December 20, 2016 Earnings Call and FedEx 2016 Annual Report.

Chart 1 not only shows that USPS's capital expenditures as a percentage of revenue have fallen well below its competitors', but also that USPS's capital expenditures took longer to recover from the Great Recession. UPS's and FedEx's capital expenditures had bottomed out, and were already recovering, by 2010 and 2009, respectively. By contrast, USPS's capital expenditures did not start to grow again following the Great Recession until 2013.

While USPS's capital expenditures have grown modestly since 2013, they have not returned to their pre-2006 levels. As Chart 2 below shows, in the decade before the establishment of the CPI-U price cap, USPS had average annual capital expenditures of 4% of revenue. USPS's capital expenditures as a percentage of revenue were half that -- 2% -- in the decade after the CPI-U price cap was imposed. *See* Chart 1 above.

Chart 2:

Year	USPS CapEx as % of Revenue
1997	5.6%
1998	5.1%
1999	6.2%
2000	5.2%
2001	4.5%
2002	2.6%
2003	1.9%
2004	2.5%
2005	3.3%
2006	3.6%
USPS Average:	4.0%

Source: USPS Annual Reports, 1997-2006.

As the OIG has observed, USPS's insufficient capital expenditures, like its service cuts, "could undercut long-term performance." OIG, "Peeling the Onion," at 1. The OIG has also concluded that the CPI-U price cap has "eroded the ability of the Postal Service to fund" its universal service obligation. OIG, "Funding the Universal Service Obligation," at 1. Because the current price cap is inconsistent with USPS achieving Objective #5, the Commission should eliminate the price cap.

C. Capping Price Increases for Market Dominant Products at the CPI-U Rate Is Irrational

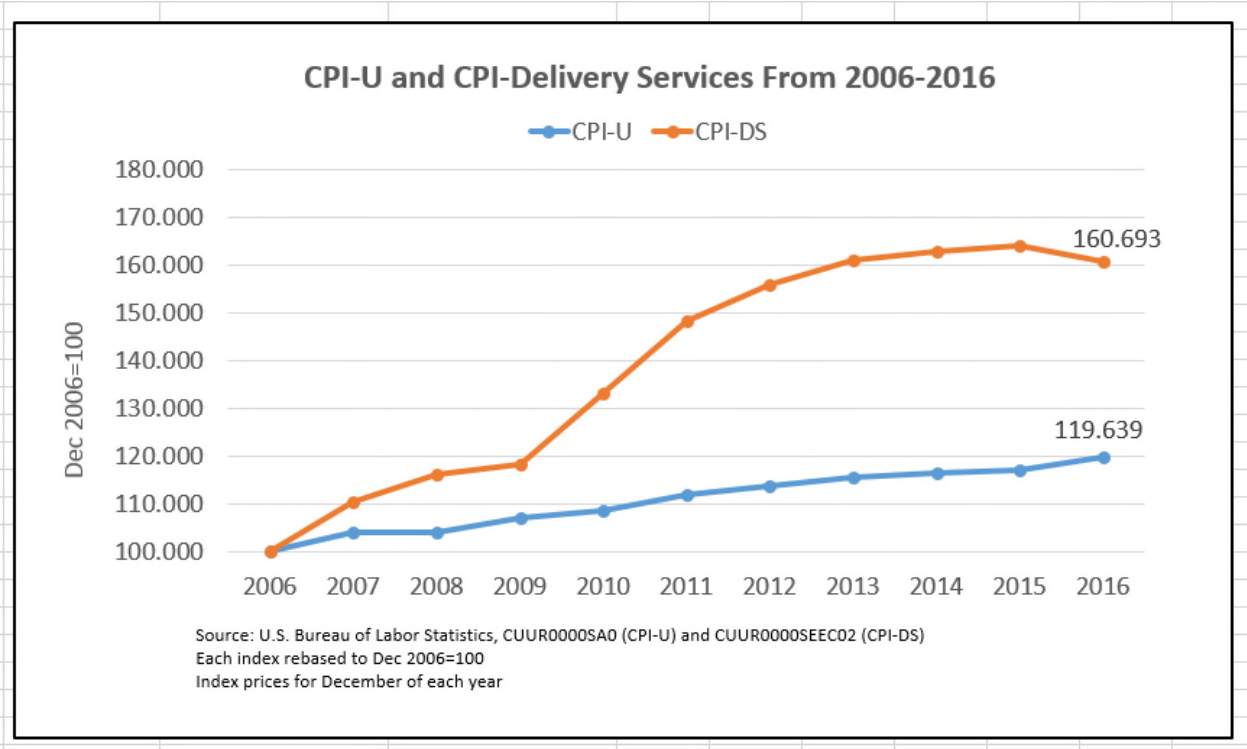
Capping price increases for market dominant products at the CPI-U inflation rate provides USPS insufficient price flexibility. Simply put, the CPI-U does not adequately capture the relevant cost trends affecting the provision of delivery services in this country. The CPI-U includes prices changes for all items that consumers purchase, including food, clothing, shelter and medical services.

One could compare the CPI-U to a more relevant sub-index of the CPI-U, the CPI for Delivery Services ("CPI-DS"). The CPI-DS makes for an apt comparison because it focuses on consumer spending in the industry in which USPS operates, delivery services.

Moreover, the CPI-DS reflects prices charged by private sector delivery companies, including the two national logistics and delivery companies most similar to USPS, namely, UPS and FedEx.

A price cap based on the CPI-DS would have allowed USPS, if it chose, to charge higher prices for its market dominant products than the CPI-U price cap has allowed. Charging higher prices would have been an alternative to some or all of the service cuts noted above. As shown on Chart 3 below, the CPI-DS has outpaced the CPI-U over the last decade, increasing a total of 60.7% from 2006 to 2016, compared to the CPI-U's total increase of 19.6%:

Chart 3:



In 2016, the average actual price charged per piece of First-Class Mail was 45 cents. Had a CPI-DS price cap been in place since 2006, and had USPS by December 2016 raised First-Class postage as far as the cap allowed, the average First-Class Mail price in 2016 could have been as high as 59 cents.

Market dominant products priced up to a CPI-DS price cap would still have been relatively cheap. The 2016 price of a First-Class stamp would have been 63 cents had USPS raised prices as high as it could under a CPI-DS price cap. That would still have been well below the 2016 price of a stamp (converted into US dollars) in Australia (77 cents), Canada (76 cents), France (85 cents), Germany (74 cents), the United Kingdom (80 cents) and Japan (73 cents).

There is no doubt that higher prices set under a CPI-DS price cap would have generated significantly more revenue for USPS. Despite the growth of digital technology as an alternative to mail, the price elasticities of USPS's market dominant products remain low, especially for First-Class Mail. *See* OIG, "Analysis of Postal Price Elasticities" (May 1, 2013), at ii ("Price increases *will* increase revenues …. The demand for postal products remains price inelastic") (emphasis added).[5]

Using USPS's estimate of a -0.19 price elasticity for First-Class Mail, we calculate that higher First-Class Mail prices permitted by a CPI-DS price cap would have caused First-Class Mail volume in 2016 to dip by 4 billion pieces, but would have generated additional revenue of $6.6 billion. As shown by Chart 4 below, for the decade 2006 to 2016, a CPI-DS price cap may have generated a total $56.8 billion additional revenue for USPS.

[5] The Inspector General writes that "a case can be made that [postal] products are becoming *less* price sensitive. This may be because customers most likely to leave the Postal Service for the Internet have already done so, leaving the remaining customers more loyal in the face of price increases." *Id*. (preface) (emphasis in original).

Chart 4:

CPI-DS PRICING ILLUSTRATION
FIRST-CLASS MAIL

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	SUM OF REVENUE CHANGE
Actual Average Price/Piece ($)	$0.38	$0.40	$0.42	$0.43	$0.43	$0.44	$0.42	$0.43	$0.45	$0.45	$0.45	
Average Price/Piece ($) under CPI-DS	**$0.37**	**$0.42**	**$0.46**	**$0.47**	**$0.53**	**$0.57**	**$0.57**	**$0.59**	**$0.62**	**$0.63**	**$0.59**	
Actual Volume (pieces in bill)	97.6	96.3	91.7	83.8	78.5	73.5	68.7	65.8	63.8	62.4	60.9	
Volume (pieces in bill) under CPI-DS	97.9	95.4	89.9	82.3	75.3	69.0	63.8	60.9	59.0	57.6	57.0	
Change in Volume (pieces in bill)	**0.2**	**(0.9)**	**(1.8)**	**(1.5)**	**(3.3)**	**(4.5)**	**(4.9)**	**(5.0)**	**(4.9)**	**(4.8)**	**(4.0)**	
Actual Revenue ($ in bill)	$37.0	$38.4	$38.2	$35.9	$34.2	$32.2	$28.9	$28.2	$28.4	$28.2	$27.3	
Revenue ($ in bill) under CPI-DS	$36.7	$39.9	$41.2	$38.4	$39.6	$39.5	$36.3	$35.9	$36.3	$36.1	$33.8	
Change In Revenue ($ in bill)	**($0.4)**	**$1.5**	**$3.0**	**$2.5**	**$5.4**	**$7.4**	**$7.5**	**$7.7**	**$7.9**	**$7.8**	**$6.6**	**$56.8**

Sources and Calculation Notes
Sources for "Actual Average Price/Piece", "Actual Volume", and "Actual Revenue": 2006 Annual Report (2006), 2011 Annual Report (2007-2011), 2012 Annual Report (2012), 2013 Annual Report (2013), 2016 From 10-K (2014-2016).
Calculation of Pro-Forma Average Price/Piece: Actual price/piece increase plus difference between CUUR0000SA0 (CPI-U) and CUUR0000SEEC02 (CPI-DS) indices
Calculation of Pro-Forma Change in Volume: Based on FCM own price elasticities in FY 2015 Product Demand Narrative. Volume weighted average elasticity applied to class volume total. Does not include FCM Retail Parcels (no own price elasticity available).

While a price cap based on the CPI-DS would have worked well over the past decade, NALC is not proposing that the Commission adopt such a price cap going forward. First, there is no certainty about the future rate of growth of the CPI-DS index and thus no guarantee that even a price cap based on the CPI-DS would permit USPS to charge prices sufficient to cover its costs. While preferable to the CPI-U, the CPI-DS tracks prices of private sector delivery service companies that do not have a universal service obligation and whose costs differ from USPS's. Given mail volume trends and the need for greater price flexibility to address changing economic and technological conditions, NALC submits that no price cap would be appropriate.

D. The Commission Has the Statutory Authority to Eliminate the Price Cap

Finally, there is no doubt that the Commission, as part of its 10-year review, has the authority to discontinue the price cap. The system of market dominant rate regulation that Congress established when it enacted the PAEA included a price cap indexed to CPI-U. *See* 39 U.S.C. §3622(d)(1)(A). But Congress made clear that this system, including the price cap, was subject to change after the tenth year of the statute. In particular, the PAEA authorizes the Commission, as part of its 10-year review of the original system, to "make such modification or adopt such alternative system" of regulating market dominant rates "as necessary to achieve the objectives." *Id*. §3622(d)(3). By giving the Commission not only the authority to modify the existing system but to adopt an entirely different one, Congress vested the Commission with the power to discontinue the price cap. Nothing in the statute makes the existing price cap sacrosanct or inviolable.

Relevant legislative history supports this conclusion. Sen. Susan Collins, the Senate sponsor of the PAEA, explained in the record leading to enactment of the statute that the CPI-U price cap was subject to change after ten years. *See* 152 Cong. Rec. S00000-15, 2006 WL 3592047 (Dec. 8, 2006). In a December 8, 2006 statement, Collins said that the price cap would be an important element of providing "*10 years of*" predictable rates. *Id.* (emphasis added). She added that "[a]fter 10 years, the Postal Regulatory Commission will review the rate cap" and will be authorized "to modify or adopt an alternative system." *Id*. Collins indicated that the Commission had the authority to discontinue the price cap after ten years: "[w]e at least will see a decade of rate stability, and I believe the Postal Regulatory Commission, at the end of the decade, *may well* decide that it is best to continue with a CPI rate cap in place." *Id*. (emphasis added). These remarks by the law's chief Senate sponsor make abundantly clear that while the Commission could opt to leave the price cap in place, it certainly has the option, at the 10-year mark, to eliminate it.

Because the Commission has the authority to eliminate the existing price cap, and because the existing price cap is inconsistent with USPS achieving Objective #5, the Commission should eliminate it.[6]

III. USPS SHOULD BE ALLOWED TO FILE A ONE-TIME "TRUE UP" RATE CASE

Regardless of what action the Commission takes on the price cap, NALC urges the Commission to permit USPS to file a one-time "true up" rate case, to allow USPS to bring market dominant rates to a point consistent with a moderate operating profit. The PAEA gave USPS a one-year window, in the year following the statute's 2006 enactment, to file such a "true up" case, *see* 39 U.S.C. §3622(f), but USPS chose not to file one. That was before the Great Recession hit and the long-term decline in mail volume began. Now, a decade later, after the price cap has deprived USPS of much needed price flexibility and starved it of resources, USPS should be allowed to pursue a one-time "true up" rate case to reset prices to a level that will provide it financial stability. The revenue generated by such a "true up" would help USPS pay down its $15 billion debt, invest in much needed repairs and improvements, including a desperately needed fleet upgrade, and bolster the cash cushion it needs to weather future economic downturns or crises.

CONCLUSION

For the reasons set forth above, the Commission should eliminate the current CPI-U price cap. In its place, the Commission should implement a system for regulating market dominant rates that, unlike the current system, assures adequate revenue for USPS to achieve and maintain financial stability.

[6] Were the Commission to eliminate the price cap, it would be acting consistent with recent actions by postal systems in other countries. A 2017 OIG report observed that in five countries studied -- Australia, Canada, France, Germany and the United Kingdom -- postal price regulation has been modified to allow for increased flexibility, including price increases greater than inflation. *See* OIG, "Lessons in Price Regulation," Report No. RARC-WP-17-003 (Feb. 8, 2017), at 1.

In addition, regardless of what action the Commission takes on the price cap, the Commission should permit USPS to file a one-time "true up" rate case, to allow USPS to bring market dominant rates to a point consistent with a moderate level of operating profit.

March 20, 2017

Respectfully submitted,

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EXHIBIT A

An Update of the 2010 OIG Paper on the Financial Sustainability of the Postal Service

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MARCH 17, 2017

Major Findings

Our findings indicate that the Postal Service will not be able to breakeven in 2021 and pay all of its statutory obligations unless it can increase its prices by more than the rate of inflation. Under currently expected trends, the Postal Service would need annual real price increases of 0.7 percent through 2021, or a cumulative real increase in revenue of 17.3 percent. In addition we believe that the Postal Service should earn a margin over breakeven of about 5.0 percent of sales for capital improvements, retiring its debt to the Treasury and as a buffer in case of an economic downturn or other events that could cause an acceleration of the decline in Market Dominant volume or a more rapid deceleration of the growth of Competitive products than we have assumed. Five percent of estimated annual revenue in 2021, or $4.2 billion, is used here to meet this goal and is a much smaller margin than most large American firms earn. It would require additional annual real price increases of 0.84 percent. See Section 5.2 for the volume assumptions on which these findings are based.

The estimated price increases described above are based on particular assumptions as to productivity and volume mail mix changes. As discussed below, different assumptions indicate that the Postal Service might need greater or even lower price increases to breakeven. See Section 6 for sensitivity analyses.

1. Introduction

Currently, the US Postal Service does not generate enough net income (income minus expenses) to pay all its obligations. This has been the case for several years as the Postal Service has been forced to default on over $34 billion of statutorily-required payments to prefund its retiree health care benefits and to reduce its unfunded liabilities to the federal government's retirement systems. The last retiree health benefits prefunding payment the Postal Service made was in 2010.[1] Table 1.1 presents the amounts that the Postal Service has failed to pay through 2016.[2]

[1] Retiree Health Benefits Fund (RHBF) payments paid by USPS:

FY 2007	$5.4 billion (plus the FY 2006 escrow amount of $3 billion for total $8.4 billion)
FY 2008	$5.6 billion
FY 2009	$1.4 billion (changed from original $5.4 billion by Congress)
FY 2010	$5.5 billion (last payment made)

[2] PAEA required the prefunding for the years 2007 through 2016 while also requiring USPS to continue paying the retiree health benefits premiums like it has since 1989. It also set up the 2017 change to the actuarial methodology where USPS would no longer have to directly pay for the retiree health benefit premiums; instead the premiums would be paid by OPM from the Retiree Health Benefit Fund. The Postal Service is still required to pay the fund,

The Postal Service has not, however, defaulted on its payroll or other bills. See Appendix A for a description of the funding of Postal Service Retiree Health Benefits and unfunded pension obligations.

Table 1.1
Statutorily Required Payments that the Postal Service Has Missed for 2012-2016
($ Billion)

Fiscal Year	Missed Retiree Health Benefits Prefunding Payments	Unpaid Federal Employee Retirement System Supplemental payments
2012	11.1[a]	
2013	5.6	
2014	5.7	
2015	5.7	0.2
2016	5.8	0.2
Total	33.9	0.5

a The 2011 payment of $5.5 Billion was deferred by Congress to 2012.

Postal Service finances have been slowly improving over the past several years. Market Dominant net revenue (or contribution) has been slowly declining, but this has been more than offset by net revenue from Competitive products whose volume is expanding rapidly. Table 1.2 displays the recent trends in postal finances. It excludes the distorting effect of the temporary exigent increase in Market Dominant rates that the Postal Service received from January 2014 thru April 2016.[3] The table displays the revenue, attributable cost and contribution as a percentage of total institutional costs for both Market Dominant and Competitive products for the years 2013 thru 2016. It can be seen that the contribution of Market Dominant products as a percentage of total institutional costs declines, while the contribution of Competitive products[4] as a percentage of total institutional costs increases. The table shows the total institutional contribution in 2016 was 81.7 percent of the $34.6 institutional costs.

but only the Normal Costs, which is an actuarial estimate of the increase in the RHB liability for current employees, plus any unfunded liability in the fund over 40 years.

[3] The Postal Service imposed an exigent surcharge (that was approved by the Postal Regulatory Commission) on Market Dominant products between January 26, 2014 and April 19, 2016 to compensate for lost revenues caused by the great recession of 2008 and 2009.

[4] Several Market Dominant products have been transferred to Competitive status over the years. Table 1.2 presents the Competitive category as if these products had been transferred in 2012.

In the future, the statutorily mandated payments that the Postal Service will be obligated to pay are revised downward by the PAEA for 2017 and beyond. Table 1.3 shows the retiree health benefits and pension liabilities of the Postal Service for the years 2015 and 2016 and the estimated liabilities for the years 2017 through 2021.[5] If the 2016 payments had been at the 2017 level called for in Table 1.3, contribution to institutional costs would have been 86 percent. Thus, if these trends continue, the Postal Service will slowly continue making progress toward breaking even, but it will take many years for this to happen.

Table 1.2
Contribution of Market Dominant and Competitive Products to Postal Service Institutional Costs without Exigent Revenue 2013-2016
($ Billions)

	2013	2014	2015	2016
Market Dominant without Exigent Revenue				
Revenue	51,274.3	51,890.4	51,650.7	48,827.9
Attrib. Cost	29,288.4	28,205.0	28,282.9	28,261.4
Contribution	21,985.9	22,033.8	21,249.8	21,566.4
Contribution as a Percent of Total Inst Cost	66.3%	64.5%	62.8%	59.3%
Competitive				
Revenue	13,741.1	15,280.0	16,424.6	18,495.4
Attrib Cost	9,881.1	10,969.9	11,913.4	12,496.2
Contribution	3,860.1	4,310.1	4,511.2	5,999.2
Contribution as a Percent of Total Inst Cost	11.6%	12.6%	13.3%	16.5%
Total without Exigent Revenue [a]				
Revenue	67,341.8	66,502.9	66,833.2	70,464.9
Attrib Cost	39,169.5	39,174.9	40,196.3	40,757.6
Contribution	25,846.0	26,344.0	25,761.0	27,565.6
Contribution as a Percent of Total Inst Cost	78.8%	79.9%	78.8%	81.7%

a Total revenues without the exigent surcharge revenue includes other income, appropriations, and investment income.

[5] The estimates can be found in the FY 2016 10-K statement at page 28. The 10-K notes that the estimates are provided by OPM and are a preliminary 5-year estimate.

Table 1.3
Actual 2015 and 2016 and Estimated 2017-2021 Costs for Postal Service Retiree Health Benefits and Pension Liabilities
($ Billion)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Retiree Health Benefits Pre-Funding	5,700.0	5,800.0	-	-	-	-	-
Retiree Health Benefits Current Year Premiums	3,111.1	3,304.7	-	-	-	-	-
Total Retiree Health Benefits Expense	8,811.1	9,104.7					
CSRS Liability Increase (Current Employees) (Non-Add to Tot	481.8	422.8					
FERS Unfunded Liability	240.9	247.6					
Total Service-Wide Expenses 2015 & 2016	9,052.0	9,352.3					
Retiree Health Benefits Normal Cost			3,078.8	3,100.0	3,300.0	3,500.0	3,600.0
Retiree Health Benefits Unfunded Liability			2,944.0	2,944.0	2,944.0	2,944.0	2,944.0
Total Retiree Health Benefits Expense			6,022.8	6,044.0	6,244.0	6,444.0	6,544.0
CSRS Unfunded Liability			1,230.0	1,230.0	1,230.0	1,230.0	1,230.0
FERS Unfunded Liability			247.6	247.6	247.6	247.6	247.6
CSRS Liability Increase (Current Employees) (Non-Add to Total)			362.8	302.8	242.8	182.8	122.8
Total Service-Wide Expenses 2017 & 2021			7,500.4	7,521.6	7,721.6	7,921.6	8,021.6
Change from Prior Year			(1,851.9)	21.2	200.0	200.0	100.0
Change from FY 2016			(1,851.9)	(1,830.7)	(1,630.7)	(1,430.7)	(1,330.7)

Source: FY 2015 and FY 2016 CRA reports; USPS FY 2016 Form 10-K report at 28; FY 2017 Integrated Financial Plan

2. Purpose

The purpose of this paper is to forecast the increase in revenue (over the assumed CPI growth of two percent) that will be necessary for the Postal Service to break even while meeting its statutorily required obligations and to generate a small profit. Income above breakeven is needed because of the uncertainties in its markets. In particular there is the uncertainty that the decline in its Market Dominant revenues will not accelerate because of technological developments and that the rapid growth of its Competitive volumes will continue given the threat of increasing competition in package delivery market. The Postal Service's finances are particularly sensitive to the economy. A recession would almost certainly mean that this paper's forecast of additional revenue needed to break even was too optimistic.

Breakeven is a minimum target for the Postal Service, and there are reasons that additional revenues will be necessary. Even if the Postal Service were to breakeven financially, it would not ensure that the Postal Service would be able to meet its statutorily required payments. Most

postal observers believe that the Service will need to make considerable capital investments, to make up for its diminished capital investment over the previous 10 years. Replacing its vehicle fleet is but just one example of the need for additional capital. In addition, the Postal Service owes the Treasury $15 billion, and under current law it cannot borrow any more. This amount should be paid back in order for the Postal Service to have financial flexibility like all successful major corporations. Because of the uncertainty surrounding its future environment and its need to make investments and to repay its debt, we believe it is advisable for the Postal Service to earn a margin on its sales. We have selected a 5 percent margin as a modest one given those of other large commercial firms in the economy.

To summarize, this paper will estimate the additional amount of revenue that the Postal Service will need by 2021 to be able to pay all of its operating expenses plus the estimated costs of retiree health benefits and unfunded liabilities for the government's pension systems and to earn a modest profit.

3. Background

This paper, sponsored by the National Association of Letter Carriers (NALC), is an update of an earlier one dealing with a similar subject. The USPS Office of the Inspector General (OIG) published the white paper, *Implications of Declining Mail Volumes on the Financial Sustainability of the Postal Service,*[6] under the aegis of George Mason University in September, 2010. It was authored by Robert Cohen and Charles McBride, two of the three authors of this paper.

At that time, mail volume was rapidly declining from its 2006 peak of 213 billion pieces to 177 billion pieces in 2009. The Boston Consulting Group (BCG) had recently published a baseline volume forecast of 150 billion pieces in 2020, based on their analysis of several mailer surveys that they had conducted. Also, the recently enacted Postal Accountability and Enhancement Act of 2006 had established a CPI-based price cap on Postal Service Market Dominant mail categories and had increased the Postal Service payments for Retiree Health Benefits by about $5 billion. The combination of these factors had caused many postal experts, including the OIG, to have serious concerns about the Postal Service's long-term financial stability. As a result, the OIG engaged George Mason University to develop and evaluate several future scenarios based

[6] See the online OIG paper RARC-WP-10-006 at https://www.uspsoig.gov/sites/default/files/document-library-files/2015/RARC-WP-10-006.pdf.

on extrapolated USPS Fiscal Year (FY) 2009 financial data and the BCG 2020 volume forecast to see if the Postal Service might achieve financial breakeven in 2020.

The OIG paper calculated that a cumulative average revenue per piece increase of 28.7% above CPI would be required over the 11-year period from 2009 to 2020 to achieve financial breakeven in 2020. This would equate to an annual increase over inflation of about 2.3%. Many sensitivity analyses were developed to explore the effects of uncertainties in the 2020 values of: productive hourly wage, total factor productivity (TFP), fixed costs, retail costs, a change from 6-day to 5-day delivery, retiree health benefit costs, and others. The results and details of these scenarios are too lengthy to include here, but can be found in the 2010 OIG paper. On a very general level, the results suggested that achieving financial breakeven in 2020 would not be possible without major changes in USPS operations and/or relief from Congress on some of the new PAEA requirements.

Looking at the OIG paper's conclusion now in 2017, it almost certainly overestimated the need for additional revenue or cost cutting required for the Postal Service to break even in 2020. This was primarily due to BCG's (and most other observers) underestimating the future revenue that would be contributed by Competitive products. In the 2009 base year of the OIG paper, competitive products contributed about 10 percent of total revenue. BCG forecast it to grow to about 18 percent in 2020. However, by 2016 it was already 26 percent and continuing to grow rapidly. Almost certainly it will be a much larger percentage by 2020. The unanticipated growth of Competitive mail has greatly reduced the need for additional revenue to let the Postal Service break even in 2020 from what the OIG paper estimated.

Another, but somewhat less significant, misestimate that contributed to the miscalculation of the additional revenue needed to breakeven in 2020 was the unanticipated slowing of total USPS salary levels (cost per work year without system wide benefits like unemployment compensation) between 2009 and 2015. It was 5.9 percent versus the CPI growth of 10.2 percent between 2009 and 2015. Much of the lower than expected increase was due to the greater use of lower-salary employees (mainly non-career). We do not think this will continue because the Postal Service is now at the maximum number of non-career employees allowed in its labor contracts.

4. Methodology Employed

The 2010 OIG paper employed the Postal Service Cost Rollforward model that had been used by the Postal Service and the Postal Regulatory Commission since the 1970s to forecast postal costs based on estimated volumes.[7] The model was used again by the Postal Service in its July 6, 2010 exigent rate filing with the PRC. A description of the model used in the 2010 study is included in the OIG paper. The methodology used in this study closely follows the one described in the OIG paper.[8]

The model projects future costs from base year costs reflecting changes due to:

- Volume by product
- Cost level (labor and other resources)
- Efficiencies due to cost reduction programs
- Nonvolume workload (e.g., number of post offices and number of delivery stops)
- Servicewide costs (depreciation, workers' compensation, escrow requirements, etc.)

The model accepts these factors as inputs and applies them to the Postal Service Cost and Revenue Analysis (CRA) system of accounts which uses 17 cost segments and about 170 cost components. The segments are listed below in Table 4.1 along with an example of a component that belongs to each segment:

5. The Base Case

A "base case" 2021 financial scenario was developed using the following assumptions:

- 2021 volumes by major product are those described in Table 5.1. Volume breakdown by products are shown in Appendix C.
- Cost levels, including salaries, unit transportation costs, etc., are increased at the rate of an assumed 2 percent annual inflation from their base values in FY 2015.
- There are no allowances for changes in efficiency due to cost reduction programs.
- Changes in number of delivery points and number of post offices are estimates based on past trends.
- Estimated 2017-2021 Costs for Postal Service Retiree Health Benefits and Pension Liabilities are as presented in Table 1.3.

[7] The model has undergone continuing improvements since it was first introduced in the 1970s.

[8] See Appendix B for a more detailed description of the Cost Rollforward model.

Table 4.1
Cost Segments and Example of Cost Components

Segment	Example of Component
1 – Postmasters	Postmasters EAS 23 and below
2 – Supervisors and Technical Personnel	Higher Level Supervisors
3 – Clerks and Mail handlers,	CAG A-J Mail Processing
4 – Clerks, CAG K Clerks,	CAG K
6 – City Delivery Carriers,	In- Office In-Office Direct Labor
7 – City Delivery Carriers,	Street Network Travel
8 – Vehicle Service Drivers	Vehicle Service Drivers
10 – Rural Carriers	Equipment and Maintenance Allowance
11 – Custodial Maintenance	Equipment Maintenance
12 – Motor Vehicle Service	Supplies and Materials
13 – Miscellaneous Operating Costs	Carfare and Tolls
14 – Purchased Transportation	Highway
15 – Building Occupancy	Rents
16 – Supplies and Services	Equipment
17 – Research & Development	R&D
18 – Administration and Regional	Operations Headquarters
19 – General Management Systems	Supplies &Services
20 – Other Accrued Expenses	Equipment Depreciation

5.1. Volumes for 2021[9]

Table 5.1 displays the major category volumes from 2014 through 2016. Figure 5.1 graphically displays the annual percentage changes. It can be seen that the trends for First-Class and Standard are relatively stable while the trend for Competitive volume shows rapid growth. The latter grew 11 percent in 2014, 15 percent in 2015 and 14 percent in 2016. Absent an extensive econometric analysis which is beyond the scope of this study, it is almost impossible to reliably estimate the amount of Competitive volume the Postal Service will have in 2021. For the base case of this updated study we have used a linear projection of FY 2014, 2015 and 2016 volumes of Market Dominant and Competitive products to FY 2021.[10]

[9] See Appendix C for a more complete description of the volumes used in this paper.

[10]Five of the 40 mail categories used as volume inputs for the volume roll forward had what were judged to be unreasonable projections. Three had negative projected 2021 values and so we set their volume at 96 percent of the FY 2016 volumes for 2021. They are COD, Standard Parcels, and Standard Post. The projections for two of the

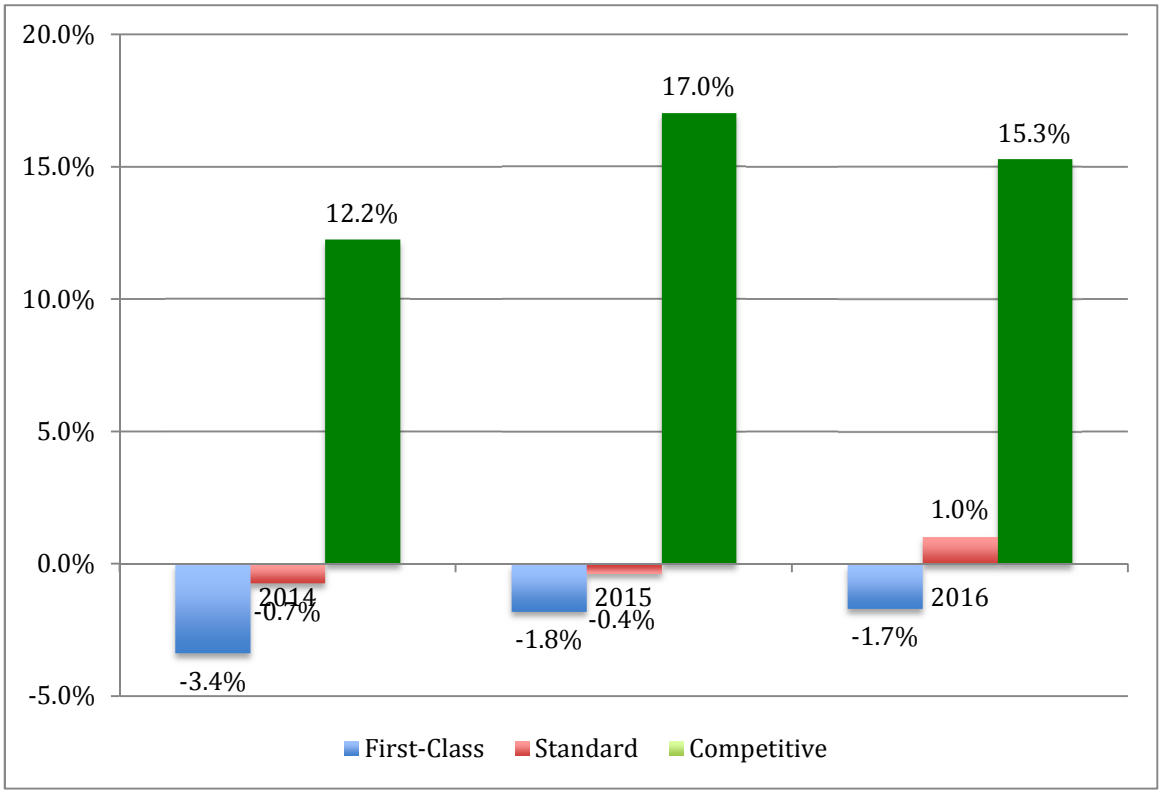
Table 5.1
Volume Trends of the Major Categories

	2014 Volume (Billion)	Change from Previous Year (%)	2015 Volume (Billion)	Change from Previous Year (%)	2016 Volume[a] (Billion)	Change from Previous Year (%)
First-Class	64.5	-3.4	63.3	-1.8	62.3	-1.7
Standard	80.4	-0.7	80.1	-0.4	80.9	1.0
Competitive	3.4	11.1	4.0	14.8	4.5	13.7

a From PRC Docket ACD volumes

Since the very large growth of Competitive products is not likely to continue at its recent rate over the 5-year projection period, we view our linear projection as an upper bound.

Figure 5.1
Percent Changes Annually in First-Class, Standard and Competitive Volumes



Consequently, we have made modifications to develop our base case. We reduced the linear projection for Parcel Select and Delivery Confirmation by 75 percent because they are subject to increasing competition and are most dependent on drop shipping (the practice of entering mail at

categories, Standard Carrier Route and PO Boxes, were positive but unreasonably low due to larger than average volume drops in FY 2016 and FY 2015. These two linear projections were adjusted in the same way.

or near the destination post office) by UPS, FedEx and Amazon. These companies are reducing the fraction of their parcels that they drop ship with the Postal Service by employing computer algorithms that identify the parcels that the company can economically delivery itself. UPS has announced that it is starting its own Saturday delivery for residential parcels and Amazon is expanding its own delivery network. There has also been a proliferation of small-scale delivery firms delivering residential parcels. We will begin with the modified linear projection described above and then conduct sensitivity analyses to see the impact of alternative estimates. See Appendix C for details on the development of the base year case.

The base case volumes for the major categories that we use for 2021(in billions) are: First-Class 55.8, Standard 88.3 and Competitive 5.9. It should be noted that in FY 2016 Competitive products made a per piece contribution of $1.33 while the average per piece contribution of Market Dominant products was $0.15[11]. So at today's prices and costs, the Competitive volume in 2021 would make about as much contribution as the contribution of 52 billion pieces of Market Dominant mail[12].

5.2. Base Case Results

In this study the base year for the Rollforward Model is FY 2015. This means that the Postal Service volumes, costs and revenues from the CRA for that year are the starting point. In FY 2015, including all of its statutory obligations, the Postal Service recorded a loss of $5 billion or 7 percent of revenue. To achieve breakeven in 2021, prices must be increased by a cumulative 17.34 percent between FY 2015 and 2021 (which includes the 7 percent breakeven requirement for FY 2015). On an annualized basis, this increase is 2.70 percent.

Table 5.2 presents the results of the base case model run. The table provides the volume, cost and revenue for the base year, 2015 and the same information for the test year, 2021 where the cost model has the Postal Service achieve breakeven. The table is in nominal dollars. Since the model assumes an average annual increase in inflation of 2 percent, the breakeven real price increase is 0.7 percent annually or 2.7% annually. Competitive product volume, cost and revenue show the largest increases by far. Its revenue, increases from $16.5 billion to $27.2 billion or 65

[11] Calculated from the public CRA for 2016.

[12] This assumes that First-Class and Standard are combined in the same ratio as shown in 2016.

percent in nominal dollars. The other category whose revenue increases substantially is Standard, growing more than $5 billion in nominal dollars.

Table 5.2. Aggregated Summary Data for FY 2015 and Base Case FY 2021
(Annualized Breakeven Increase 2.70%, FY15-21 Breakeven Increase 17.34%)

Major Category	Volume 15 (000)	Cost 15 ($ 000)	Revenue 15 ($ 000)	Volume 21 (000)	BE Cost 21 ($ 000)	BE Rev 21 ($ 000)
First-Class	62,619,368	12,436,525	28,707,665	56,228,618	12,026,165	29,527,846
Standard	80,090,273	11,080,839	17,661,214	88,333,336	14,726,085	22,935,005
Periodicals	5,838,175	2,101,077	1,581,368	4,447,427	1,776,872	1,398,059
Package Services	564,576	768,082	803,316	693,924	857,583	1,011,592
Free Mail	399,762	405,300	0	350,040	393,424	0
Special/Anc Serv	4,216,720	1,532,554	1,882,677	6,391,979	1,594,585	2,223,351
Competitive[a]	4,647,201	12,113,234	16,456,169	7,237,266	18,342,806	27,204,148
Other	0	33,573,276	1,858,790	0	34,582,482	0
Total	158,376,076	74,010,886	68,951,200	163,682,590	84,300,002	84,300,002

a Includes International and Services

6. Sensitivity Analyses

In every complex analysis about events which have not taken place, assumptions have to be made about the value of variables used in the analysis. In this section, we present the sensitivity of the base case results to different values of two important variables so that their relative importance can be seen. In addition, the reader may be interested in seeing the base case results with different values for these variables.

6.1. Total Factor Productivity

Table 6.1 displays the recent changes in TFP from 2010 thru 2016. During the previous two years TFP experienced a negative growth rate due to the recession, but it grew rapidly when the economy improved beginning in 2010. In more recent years the growth rate has diminished and it turned negative in 2016.

Table 6.1

Changes in Total Factor Productivity (TFP) from 2010-2016

2010	2011	2012	2013	2014	2015	2016
2.0	1.3	1.0	1.8	0.3	0.1	-0.2

In this paper, TFP is assumed to remain unchanged in the base case. To see how sensitive the base case result is to this assumption, TFP is allowed to increase and decline by a total of 3 percent over the period from 2015 to 2021. The results are shown in Table 6.2 below.

Table 6.2
Sensitivity of Base Case Result to
Cumulative 3 Percent Negative and Positive Changes in Cumulative TFP

2021 Volume (billions)	-3% TFP 2021 Costs ($billions)	-3% TFP Annual BE Increase	Base Case Costs ($ 2009)	Base Case Annual BE Increase	+3% TFP 2021Costs ($billions)	+3% TFP Annual BE Increase
163.7	$87.0	3.24%	$84.3	2.70%	$81.6	2.15%

6.2. Volume Mix

To examine the sensitivity of our results to alternative volume mixes (especially with respect to First-Class Mail and Competitive products), we compared the base case volume mix results with two other volume mix cases. The first is the base case volume mix with no growth in Competitive product volumes. The second case is more extreme in that it assumes no Competitive product growth as well as a 15 percent cut in 2021 First-Class volume. In this second scenario, First-Class volume would only be 47.8 billion pieces compared with 56.2 billion in the base case. Results for these cases are shown in Table 6.3 below. As expected, it can be seen that the annual breakeven increase is very sensitive to the growth assumptions about First-Class Mail and Competitive products.

Table 6.3
Sensitivity of Base Case Result to
Changes in 2021 Mail Mix

Volume Mix Case	Vol Case Volume (billions)	Vol Case Cost ($billions)	Vol Case Annual BE Increase
Base Case & No Comp Vol Growth	161.1	79.6	3.27%
Base Case, No Comp Vol Growth, 15% reduction in First-Class	152.7	77.8	3.88%

6.3. Margin of Revenue Over Breakeven

A 5 percent increase over base case breakeven revenue requires an additional 0.84 percent increase in real prices. We estimate that a 10 percent increase would require another 0.81 percent, or 1.65 percent in total, increase in real prices in addition to the 0.7 percent increase required to breakeven.

7. Conclusion

In the white paper produced for the USPS OIG in 2010, Implications of Declining Mail Volumes on the Financial Stability of the Postal Service, it was concluded that a price greater than inflation would be necessary to secure the long-term financial stability of the Postal Service, given then-forecasted volume trends. In this update, we have come to a similar conclusion, despite an improved volume outlook and greater than expected success by the USPS in reducing costs. As our projections in this update have shown, real price increases are necessary for the Postal Service to break even, meet its statutory obligations, and build the reserves necessary to pay down its debt and make needed capital investments.

Appendix A
Retiree Health Benefits and Pension Costs

Introduction

Among the total costs of the Postal Service there are two streams of costs that the Postal Service has been legislatively mandated to expense: Costs for pre-funding future retiree health benefits and the financing of any unfunded liabilities in pensions. The table below shows costs for the years FY 2015 and FY 2016 and then supplies estimates from FY 2017 through FY 2021.[13] Some of the costs are attributed to the classes of mail, but the majority of the expenses are considered institutional by the Postal Service.

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Retiree Health Benefits Pre-Funding	5,700.0	5,800.0	-	-	-	-	-
Retiree Health Benefits Current Year Premiums	3,111.1	3,304.7	-	-	-	-	-
Total Retiree Health Benefits Expense	8,811.1	9,104.7					
CSRS Liability Increase (Current Employees) (Non-Add to Tota	481.8	422.8					
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FERS Unfunded Liability			247.6	247.6	247.6	247.6	247.6
CSRS Liability Increase (Current Employees) (Non-Add to Total)			362.8	302.8	242.8	182.8	122.8
Total Service-Wide Expenses 2017 & 2021			7,500.4	7,521.6	7,721.6	7,921.6	8,021.6
Change from Prior Year			(1,851.9)	21.2	200.0	200.0	100.0
Change from FY 2016			(1,851.9)	(1,830.7)	(1,630.7)	(1,430.7)	(1,330.7)

Source: FY 2015 and FY 2016 CRA reports; USPS FY 2016 Form 10-K report at 28; FY 2017 Integrated Financial Plan

[13] The estimates can be found in the FY 2016 10-K statement at page 28. The 10-K notes that the estimates are provided by OPM and are a preliminary 5-year estimate.

Retiree Health Benefits

The Postal Accountability and Enhancement Act (PAEA) established a financing method for the costs of future health benefits for Postal Service annuitants by establishing the Postal Service Retiree Health Benefits Fund (PSRHBF), administered by the Office of Personnel Management (OPM), to eventually pay for the government's share of health benefit premiums. The PSRHBF was initially seeded by transferring the then CSRS pension fund surplus of $17 billion to the PSRHBF, in addition to the Postal Service paying almost $3 billion which was carried on the Postal Service's balance sheet as restricted cash and represented the FY 2006 savings between the 1974 – 2002 methodology and the 2003 – 2016 methodology of CSRS pension financing. Also, during the first 10 years after enactment of PAEA the Postal Service was required to continue paying the government's share of FEHB premiums for postal annuitants and also to contribute a total of $51.8 billion paid over 10 years to fund the PSRHBF. The table above shows that the total payments for these requirements in FY 2015 and 2016 were $8.8 and $9.1 billion, respectively.

After FY 2016, the PSRHBF was to be actuarially financed by the Postal Service by paying the Normal Cost (the increase in the fund liability for current employees and annuitants) and an amortized payment for any unfunded liability. In addition, the FEHB premiums for Postal Service annuitants was to be paid from the PSRHBF. At the end of FY 2016, the total liability for retiree health benefits was $104 billion of which $52.1 billion was unfunded. As seen in the above table, the total of the Normal Cost plus the amortized portion of the unfunded liability, less the FEHB premiums, is estimated to be $6.0 billion for FY 2017, a reduction of $3.1 billion from FY 2016. An initial Postal Service estimate of this cost each year for FY 2018 through FY 2021 is $6 billion to $6.5 billion.[14]

Pension Costs

PAEA also requires the Postal Service to pay an amortized payment for any unfunded balance for either the Federal Employees Retirement System (FERS) and/or the Civil Service Retirement System (CSRS). In FY 2016 OPM estimated that FERS is underfunded by $3.8 billion and CSRS is

[14] The PAEA required OPM to provide the Postal Service with preliminary estimates of the 5-year costs for payments into the PSRHBF for the Normal Costs and the amortization of the unfunded liability. Also included in the preliminary estimates are the estimated payments out of the PSRHBF for retiree health benefit premiums. See Postal Service FY 2016 Form 10-K at 28.

underfunded by $17.5 billion. The FERS unfunded amortization is to be amortized over 30 years and is to be paid as soon as OPM determines that there is an unfunded balance. In FY 2016 OPM estimated that the Postal Service payment for the unfunded balance is $248 million. It is not expected to change for FY 2017.[15] PAEA treats the CSRS unfunded balance differently. While OPM was required to provide the Postal Service with the funding status of the CSRS each year from FY 2007 through FY 2016, the Postal Service was not required to make any payments for CSRS pension liability during that time. However, OPM is required to make a new determination of the funded status of CSRS by June 30, 2017 and any unfunded liability at that time is to be amortized over a period of 25 years and the Postal Service is required to pay that amount into the retirement fund. While no determination has been made by OPM as of this date, the Postal Service has budgeted $1.2 billion for the estimated amortized payment due to the CSRS.

[15] Ibid., at 23.

Appendix B

Description of Cost Rollforward Model and NALC Study Results

B-1. Background

The GMU Cost Rollforward Model was developed in 2010 for use in an OIG study of the Postal Service's future financial sustainability. The version of the model used for this NALC paper is based on the public version of the Cost Rollforward Model that was used in the R2010-1 exigent rate proceeding at the PRC. We have updated the model to reflect the routine changes in the 2015 CRA structure, i.e., the list of mail and service categories and cost components.

The model provides the means for calculating future costs, revenues, and volumes for the various "what-if" scenarios described in the main paper. The model relies heavily on the Cost Rollforward Model developed by the Postal Service in the late 1970s. However, the GMU model extended the capability of the Cost Rollforward Model by adding the ability to calculate new prices for mail and special service categories that allow revenues to match estimated costs for a future year. A new user interface was also developed to provide a convenient means for running scenarios with different inputs and storing the summary results for a large number of scenarios on the same worksheet. The version of the Rollforward model used for this NALC study, nalcmodel0315.xls, is an attachment to the main paper.

This appendix presents the results for all scenarios (cases) used in this study and the sources for the input data. It also describes the GMU Model and how it was used to estimate financial results for the scenarios described in the main paper. Finally, it provides instructions for using the model to allow the OIG staff to investigate a wide variety of other scenarios by adding new cases or changing the inputs for the current cases.

The GMU Financial Model programs are written in the Excel-based Visual Basic for Applications (VBA) programming language, which uses Excel workbooks as model inputs and outputs. It is designed for use by analysts who are familiar with Excel and at least somewhat familiar with the standard public Postal Service reporting systems, such as the annual Cost Segments and Components, CRA and RPW Reports. Some familiarity with a standard programming language such as Basic, Fortran, or C, would be useful if changes in the VBA code are desired, but knowledge of computer programming languages is not required to use this model.

1. B-2. Overview of GMU Model

a. Cost Rollforward Model

The Cost Rollforward Model was originally developed by the Postal Service for use in its testimony for PRC omnibus rate cases, starting in the R77-1 rate proceeding. This forecasting model produces detailed forecasts by "Cost Segment" (17 broad categories of postal costs, such as Postmasters and Rural Carriers) and more detailed "Cost Components" (about 170 cost sub-categories within each cost segment such as "Postmasters EAS 23 and Below" and "Rural Carrier Equipment Maintenance Allowance"). Several forecasting steps (called effects) are used to "roll forward" the cost components from one fiscal year to the next. These effects include: cost level changes, mail volume changes, nonvolume workload changes (such as delivery points or number of post offices), cost reduction programs, and several categories of system-wide cost changes (such as worker's compensation and retiree health care costs).

The first version of the Postal Service Cost Rollforward Model was written for a mainframe computer system in the Cobol programming language. This early version of the model was very difficult for the PRC staff and the parties to understand, modify, and use. For the R80-1 rate proceeding, one of the authors of this paper converted the USPS Cost Rollforward Model to the more common Fortran computer language, which made it possible for the PRC staff and others to replicate the Postal Service cost forecast and to make changes in the inputs for the model based on results of the formal discovery process. In later years, the PRC version of the model was again rewritten by one of the authors, first in the C programming language and then in the Excel-based VBA language, both or which could be run on early IBM PC's. The 2003 PRC Excel version of the model made it possible to use simple spreadsheets for the inputs and outputs of the Cost Roll Forward Model, which made the mechanics of the forecasting process much more accessible. In 2005, the Postal Service followed suit by converting its 30-year-old Cobol-based model to the Excel/VBA language for use in the R2005-1 rate proceeding.

In spite of the many versions of the Cost Rollforward Model that have been created and used over time, the basic algorithms for forecasting costs starting with a "base year" (with known data) to a near-term future "test year" have remained virtually unchanged. Also, all versions of the model produce identical results given the same input data. This is remarkable, since the model has been subjected to intensive review and critiques by the PRC staff and the parties over

a long period of time. We believe this long history of successful use justifies using the Cost Rollforward Model as the foundation of the forecasts for this paper prepared for NALC. In this paper, we use the PRC Excel/VBA version of the Cost Rollforward Model from the R2010-1 exigent rate proceeding.

b. Estimating Breakeven Prices

For this study, substantial volume declines are anticipated in the future. This means that costs would drop, but revenues would drop even more, resulting in the need for substantial price increases to achieve financial breakeven.[16] The Cost Rollforward Model described above calculates future costs resulting from a specified set of forecasted mail and special service category volumes. However, we also need to calculate a set of future rates by category that would allow the Postal Service to achieve financial "breakeven" in a given future year. Determining breakeven prices requires several steps. First, the 2015 revenues that would result from the future volumes at current rates[17] are calculated. The percentage increase in prices required to produce revenues that equal forecasted costs is also calculated at this point in the process.

c. GMU Model workbook and its worksheets

The NALC version of the Cost Rollforward Model consists of a single workbook (NALCModel.xls) with about 10 worksheets and 20 VBA program "modules" that read the inputs and calculate the outputs. Table B-1 below provides a brief overview of the various model worksheets and their purpose. Further details on each worksheet are provided in the next section.

d. Description of columns in user interface worksheet "Cases"

A more convenient method for specifying scenarios for the GMU Model and storing the results in an organized manner was also developed for this study. This required the creation of several new VBA modules and a new "Cases" user interface worksheet, which were added to the GMU

[16] Revenues and volume-variable costs decline proportionally with volume, but fixed costs stay the same, causing costs to exceed revenues.

[17] The rates in effect during FY 2015 are used as current rates for this study.

Model workbook. An overview of the contents and sources (user-provided or calculated by the model) for the various columns in the "Cases" worksheet is provided in Table B-2 below.

Table B-1. Description of GMUModel.xls Worksheets

Worksheet Name	Worksheet Description	Notes	Sources
Cases	Summary model inputs & outputs	See Tables 2 and 3 for details	User, Model
PRCDat15	Input data for Rollforward Model	Start directory, names of mail products & cost segments	User, Provided
Compinfo15	Input data for Roll Forward Model	Model cost component numbers	User
Volume15	Input file for GMU Model	Product volumes, prices	User
Sidecalcs	Side calculations for GMU Model	Misc Calculations	User
MasterBY15	Descriptions of USPS FY 15 cost components	Contains subtotal columns not used in GMU Model	Provided

e. Creating or changing model case inputs

Table B-2 shows that cases with new volumes for each product category can be created on the "Cases" sheet simply by referring to a column in the "Volume15" worksheet. Other types of changes are accomplished through the use of a "factor file," such as the In15Yb.xls factor file used to define the base case in this paper. The contents of the In15Yb.xls file are shown in Table B-4 in the next section. For purposes of this study, the most important items in the factor files are the numerical values (shown in bold in Table B-4) in the various rows. For example, consider the following control string command that is part of the cost level effect section of the forecast (see row 24 of Table B-4, In15Yb.xls Factor File):

cl 1 1:1 -0.009

The two-letter command code "cl" means that a cost level change is to be performed on one or more cost components, in this case the component 1:1.[18] The amount of the change for each component is given by the current values for all mail categories in the cost component by the numerical constant –0.009.

[18] The designation of a particular cost component is given by a cost segment number from 1-20, followed by a colon, followed by a number from 1-2000, which is the Postal Service Cost component number. Thus, the component "18:199" is USPS Cost Component 199, and is included in Cost Segment 18 costs..

Table B-2. Column Descriptions for "Cases" Sheet

Column	Column Title	Column Description	Source
A	Case Title	Case Number & Subcase Letter (e.g., 10b)	User
B	Case Description	Brief Description of Subcase	User
C	Factor File	Name of Input Factor File for Subcase	User
D	Output File	Name of Output File for Subcase	User
E	Test Year Volume	Test Year Volumes	Model
F	Test Year Cost	Calculated Test Year Cost	Model
G	TY Rev BY Prices	Calculated Test Year Revenue at Base Year Prices	Model
H	Column G - Column F	Calculated Total Profit	Model
I	TY BrkEv PriceInc	Calculated Test Year Breakeven Price Increase	Model
J	Ann BE Rev/Pc %	Annualized % Test Year Breakeven Price Increase	Model
K	Start File	Name of FY 2015 Base Year File	User
L	Volume Column	"volume" Sheet Column Number (e.g., 2102)	User
M	Revenue/Piece Column	"volume" Sheet Column Number (e.g., 2108)	User
N	Save	"y" or "n" for Save Case to Summary File	User
O	Date/Time of Run	Date & Time of Most Recent Case Run	Model
P	TY Rev with BE Prices	Calculated Test Year Revenue with Breakeven Prices	Model

For purposes of using the GMU Model, knowledge of the specifics of these control strings and factor files is not necessary.[19] For one reason, the factor files for other cases in this study are very similar to those of In15Yb.xls, but have at least one different numerical factor in the existing control string lines, or a few different control string lines and factors. For another reason, several other factor files are included for use in creating other cases, and each factor file can serve as a template for making similar changes for new cases.

f. Output cost/revenue matrix files

The output files produced by the GMU Model are similar in structure to the annual USPS Cost Segments and Components Report and nearly identical to the PRC Cost Rollforward Model matrix files. They are "matrices" in the sense that the columns are cost components and the rows are product categories. There are separate worksheets for each cost segment that include each cost component included in that segment and one summary worksheet for the total of all cost

[19] For those who are interested, more detailed information on the VBA language, factor files, and control strings can be found in "Documentation of Excel Rollforward Cost Model" by Charles C. McBride, February, 2004. This reference document was prepared for the Postal Rate Commission.

segments. The summary sheet also contains columns showing volumes, rates, revenues, and costs by detailed mail and service category. The rows of each worksheet are the FY 2015 USPS product categories, plus rows for total attributable costs, total "Other" (costs considered non-volume variable), and total costs. The last row for each cost component (in the GMU Model only) is the percentage of total costs that are attributable. The cost components used in the GMU Model are the most detailed available from the USPS Cost Rollforward Model, which does not include class subtotals. A listing of all cost component titles and USPS identifiers is provided in the "masterby15" worksheet contained in the NALCModel.xls workbook.

g. The FY 2015 Base Year file

The FY 2015 Base Year file used in this study as the starting point for all forecasting cases is called Out1N1.xls, and is in the GMU/PRC matrix format discussed above. This matrix was created by converting a 1600-row by 200-column USPS-format cost matrix filed earlier in the R2010-4 rate case before the PRC. The conversion was done by a GMU Model utility module called "ConvertUSPSMatrix."

h. Running the model

The first step in preparing a new series of model runs is to create a new directory (or sub-directory). Then copy the files GMUModel.xls, template.xls, Out1N5P.xls, and the various input factor files provided with this documentation to this same directory. Next, open the GMUModel.xls workbook, select the "Prcdat15" worksheet, and replace the directory name in cell D1 with the new directory name.

Now select the "Cases" worksheet and create one or more new case rows by filling in the user input columns shown in Table B-2 above. (Several examples showing how case rows are created are provided in section B-3 below.) Then enter the desired starting and ending case rows for the run in cells B3 and B4, respectively. Next, select Run Macros from the Excel command menu, then select and run the macro "ProcessUCommands." After a good deal of on-screen activity, the macro should finish with the "Cases" sheet selected and the various results columns filled in for the case of interest.

B-3. Documentation of Study Case Results

In this section, the study case results are presented along with documentation of the inputs for each case. Input data include volume or price columns from the "Volume15" worksheet and

numerical constants included in the rows of the various factor files. Sources for both types of input data are presented below.

a. Description of Base Case

The base case is used as the standard of comparison with other "what-if" scenarios. It uses the base year (FY 2015) as the starting point and FY 2021 as the end point. The base case 2021 volume forecast used is presented and documented in Appendix C.

The Volume15 worksheet contains several versions of 2015 and 2021 volumes and prices. For the base case, the price column is 2108 and the volume column is 2106. All three columns are used as part of the specification of the base case inputs on the Cases worksheet of NALCModel.xls.

The base case also assumes that there would be increases in the following nonvolume workload measures from 2015-2021: city delivery points (2.26 %), rural delivery points (6.37 %), contract stations (-17.5 %), and post offices (-2.01 %). A separate factor (6.37 %) is also included for the rural carrier equipment maintenance allowance component. These projections are based on extending the current growth trends to 2021. In addition, retiree health costs in 2021 are estimated to be $6.5 billion are also included in the base case, and are documented in Appendix A.

These input values are included in the base case by using a "factor file" as discussed above. For illustration, the complete factor file (In15Yb.xls) for the base case is shown in Table B-3 below. This table "wraps" the longer rows in the spreadsheet for easier viewing. The actual row numbers in the In15Yb.xls worksheet are shown in the first column of Table B-3. The numerical factors discussed above are highlighted in bold in the table.

Table B-3. Listing of Base Case Factor File In15Yb.xls

Row #												
1	**mail volume change**	ef	MV	n								
2		mv	32	1:1	2:677	3:35	3:40	3:66	3:421	3:41	3:424	6:43
			7:47	8:57	10:69	10:70	11:75	12:543	12:549	14:142	14:681	14:143
			14:144	14:145	14:146	16:180	16:181	16:248	16:184	20:239	20:240	7:50
			21:46	21:57	21:579							
3	PESSA components	mv	19	2:428	3:429	11:74	11:79	11:81	14:681	15:165	15:166	15:167
			16:17	18:194	18:440	18:439	18:436	18:286	20:232	20:236	20:237	20:587
4		mz	1	18:202								
5		rc	2	2:4	2:31	1	3:35					
6		rc	2	2:7	13:126	1	3:40					
7		rc	4	2:14	12:101	13:128	13:137	1	21:46			
8		rc	5	2:18	7:53	12:104	13:131	13:140	1	7:54		
9		rc	4	2:675	12:545	12:550	12:568	1	8:57			
10		rc	1	6:44	1	6:43						
11		rc	2	2:676	3:423	2	3:35	3:227				
12		rc	3	2:674	12:548	12:556	2	10:69	10:70			
13		rc	1	6:604	3	6:43	7:46	7:54				
14		rc	4	2:13	12:100	13:127	13:136	3	6:43	6:44	6:604	
15		rc	1	2:17	2	7:50	7:53					
16		rc	1	2:32	7	3:40	6:43	6:44	7:46	7:50	7:53	7:54
17		rc	1	3:470	7	3:35	3:227	3:40	3:41	3:421	3:423	3:66
18		rc	1	2:678	15	3:35	3:40	3:66	3:421	3:423	3:470	3:41
			3:227	6:43	6:44	6:604	7:54	7:46	7:50	7:53		
19		rc	1	2:601	14	2:4	2:677	2:7	2:13	2:14	2:17	2:18
			2:674	2:675	2:31	2:32	2:676	2:678	2:33			
20		rc	2	2:30	3:422	40	2:4	2:7	2:677	2:13	2:14	2:17
			2:18	2:674	2:675	2:31	2:32	2:676	2:678	2:33	3:35	3:40
			3:66	3:421	3:423	3:470	3:41	3:227	4:42	6:43	6:604	7:46
			7:50	7:53	7:54	8:57	10:69	10:70	6:44	11:75	12:83	12:86
			12:543	12:545	12:548	12:89						
21		rc	4	2:9	2:29	3:228	16:177	48	1:1	1:2	2:4	2:677
			2:7	2:13	2:14	2:17	2:18	2:674	2:675	2:30	2:31	2:601
			2:676	2:678	2:33	3:35	3:40	3:66	3:421	3:422	3:423	3:470
			3:41	3:227	4:42	6:43	6:44	6:604	7:46	7:50	7:53	7:54
			8:57	10:69	10:70	11:74	11:75	11:79	12:83	12:86	12:543	12:545
			12:548	12:89	18:194	2:32						
22		rc	4	18:199	18:200	18:204	18:64	59	1:1	1:2	2:4	2:677
			2:7	2:13	2:14	2:17	2:18	2:674	2:675	2:30	2:31	2:601
			2:676	2:678	2:33	3:35	3:40	3:66	3:421	3:422	3:423	3:470
			3:41	3:227	4:42	6:43	6:44	6:604	7:46	7:50	7:53	7:54
			8:57	10:69	10:70	11:74	11:75	11:79	12:83	12:86	12:543	12:545
			12:548	12:89	18:194	2:32	2:9	2:29	3:228	13:110	13:114	16:173
			18:191	18:192	18:193	18:195	19:219					
23	**nonvolume workload**	ef	NV	n								
24		cl	1	1:1	**-0.0201**							
25		nv	5	7:54	7:47	7:48	7:50	7:53	**0.0226**			
26		nv	2	10:69	10:70	**0.028**						
27		nv	1	10:73	**0.0637**							
28		nv	3	11:74	11:81	11:79	**-.0066**					
29		nv	1	13:111	**-0.1755**							

Table B-3 (continued). Listing of Base Case Factor File In15Yb.xls

Row #												
30		nv	1	13:112	0							
31		nv	1	15:165	-.1455							
32		cl	1	15:234	0							
33		nv	2	15:166	15:167	-.0656						
34		rc	2	2:4	2:31	1	3:35					
35		rc	1	2:7	1	3:40						
36		rc	7	2:14	7:50	12:83	12:92	12:101	13:128	13:137	1	7:46
37		rc	7	2:18	7:53	12:86	12:95	12:104	13:131	13:140	1	7:54
38		rc	4	2:675	12:545	12:550	12:568	1	8:57			
39		rc	1	6:44	1	6:43						
40		rc	2	2:676	3:423	2	3:35	3:227				
41		rc	3	2:674	12:548	12:556	2	10:69	10:70			
42		rc	1	6:604	3	6:43	7:46	7:54				
43		rc	4	2:13	12:100	13:127	13:136	3	6:43	6:44	6:604	
44		rc	1	2:17	2	7:50	7:53					
45		rc	1	2:32	7	3:40	6:43	6:44	7:46	7:50	7:53	7:54
46		rc	1	3:470	7	3:35	3:227	3:40	3:41	3:421	3:423	3:66
47		rc	1	2:678	15	3:35	3:40	3:66	3:421	3:423	3:470	3:41
			3:227	6:43	6:44	6:604	7:54	7:46	7:50	7:53		
48		rc	1	2:601	14	2:4	2:677	2:7	2:13	2:14	2:17	2:18
			2:674	2:675	2:31	2:32	2:676	2:678	2:33			
49		rc	2	2:30	3:422	40	2:4	2:7	2:677	2:13	2:14	2:17
			2:18	2:674	2:675	2:31	2:32	2:676	2:678	2:33	3:35	3:40
			3:66	3:421	3:423	3:470	3:41	3:227	4:42	6:43	6:604	7:46
			7:50	7:53	7:54	8:57	10:69	10:70	6:44	11:75	12:83	12:86
			12:543	12:545	12:548	12:89						
50		rc	4	2:9	2:29	3:228	16:177	48	1:1	1:2	2:4	2:677
			2:7	2:13	2:14	2:17	2:18	2:674	2:675	2:30	2:31	2:601
			2:676	2:678	2:33	3:35	3:40	3:66	3:421	3:422	3:423	3:470
			3:41	3:227	4:42	6:43	6:44	6:604	7:46	7:50	7:53	7:54
			8:57	10:69	10:70	11:74	11:75	11:79	12:83	12:86	12:543	12:545
			12:548	12:89	18:194	2:32						
51		rc	4	18:199	18:200	18:204	18:64	59	1:1	1:2	2:4	2:677
			2:7	2:13	2:14	2:17	2:18	2:674	2:675	2:30	2:31	2:601
			2:676	2:678	2:33	3:35	3:40	3:66	3:421	3:422	3:423	3:470
			3:41	3:227	4:42	6:43	6:44	6:604	7:46	7:50	7:53	7:54
			8:57	10:69	10:70	11:74	11:75	11:79	12:83	12:86	12:543	12:545
			12:548	12:89	18:194	2:32	2:9	2:29	3:228	13:110	13:114	16:173
			18:191	18:192	18:193	18:195	19:219					
52	**other programs**	ef	OP	n								
53	RHB	cl	1	18:202	**261889**							
54	RHB	cl	1	18:203	**-2533342**							
55	** end **	**										

The third column in the factor file contains the two-letter control strings discussed in section B-1. For example, the "ef" control string shown on row 1 of the factor file specifies the beginning of a new forecasting "effect" and the second column on that row contains the name of the effect. The "mv" and "mz" control strings adjust the cost components listed on the row for the volume change effect. The "rc" control string specifies how the indirect cost components are to be changed based on changes in the direct cost components. In the Cost Rollforward Model, indirect costs are normally calculated for the mail volume and nonvolume workload effects. The "cl" string is used to specify a multiplier for all products (and fixed costs) in a cost component column. The "nv" string is used to specify a multiplier for fixed costs of a cost component only.

The changes in the base case nonvolume workload factors are shown in rows 24-33. The cost component identifiers are listed in the format segment#:component#; for example, the cost component "1:1" is cost component number 1 in cost segment 1. The name of each cost component can be found in the "masterby09" worksheet of NALCModel.xls; for example, component number 1 is "Postmasters EAS 23 & below." Row 24 specifies the nonvolume multiplier for Postmasters EAS 23 & below due to the change in the number of post offices. Row 25 specifies the multiplier for city delivery carriers due to changes in city delivery points, while row 26 is used for the change in rural carriers. Similarly, row 27 is used for the nonvolume workload change for rural carrier equipment maintenance allowance and row 29 accomplishes the same function for contract stations. The change in the base case retiree health benefits cost component (18:202 and 18:203) is shown on rows 53-54 of the In15Yb.xls worksheet.

Note that there are rows in the In15Yb.xls factor file that have "0" as the factor, which has no effect on the rollforward forecast. These rows are included simply as placeholders in case other cost components are added for a particular cost forecasting effect.

b. Summary of case results for NALC study

Table B-4 shows the "Cases" summary worksheet for this NALC paper. This tables include user inputs and GMU Model outputs for the 8 cases used in the study. A brief description of each case listed in Table B-4 is provided below.

- Case 0n: Used to calculate breakeven prices for the Base Year 2015, assuming the RHB expense is the same as FY 2015 ($8.8 billion)

Table B-4. Summary of NALC Study Case Results (3/16/17)

A	B	C	D	E	F	G	H	I	J	K	L	M	P
Strt Row	**40**												
End Row	**41**												
		Factor	**Output**	**Test Year**	**Test Year**	**TY Rev**	**Colum n G -**	**TY BrkEv**	Ann BE	**Start**	**Volu me**	**Rev/ Pc**	**TYRev with**
Case #	**Description**	**File**	**File**	**Volume**	**Cost**	**BY Prices**	**Colum n F**	**Price Inc**	Rev/P c %	**File**	**Col**	**Col**	**BE Prices**
0a	FY15 CRAMix, FY15 RHB - TY15	In0n.xls	Out0n. xls	158,376, 076	74,010, 886	68,951, 200	-5,059,6 86	7.34%	7.34 %	Out1N 0.xls	2102	2108	74,010,88 6
0an	FY15 CRAMix, RHB2 - TY15	In0an.xl s	Out0an .xls	158,376, 076	71,193, 746	68,951, 200	-2,242,5 46	3.25%	3.25 %	Out1N 0.xls	2102	2108	71,193,74 6
7n	FY21 Vol2, RHB2, 2%CPI	In15Yb. xls	Out7n. xls	163,682, 590	84,300, 002	73,877, 883	-10,422, 119	14.11 %	2.22 %	Out1N 0.xls	2106	2108	84,300,00 2
10n	FY21 Vol2, RHB2, NoExRev, 2%CPI	In15Yb. xls	Out10 n.xls	163,682, 590	84,300, 002	71,841, 404	-12,458, 598	17.342 %	2.70 %	Out1N 5.xls	2106	2108	84,300,00 2
12n	Base Case, -3% FY15-21 TFP	InPN1. xls	Out12a .xls	163,682, 590	86,996, 968	71,841, 404	-15,155, 564	21.10 %	3.24 %	Out1N 5.xls	2106	2108	86,996,96 8
13n	Base Case, +3% FY15-21 TFP	InPN2. xls	Out13 n.xls	163,682, 590	81,603, 036	71,841, 404	-9,761,6 32	13.59 %	2.15 %	Out1N 5.xls	2106	2108	81,603,03 6
14n	Base Case, no comp growth	In15Yb. xls	Out14 n.xls	161,092, 526	79,567, 266	65,589, 595	-13,977, 671	21.31 %	3.27 %	Out1N 5.xls	2107	2108	79,567,26 6
15n	Base Case, no C growth, -15% FC	In15Yb. xls	Out15 n.xls	152,658, 233	77,811, 699	61,914, 625	-15,897, 075	25.68 %	3.88 %	Out1N 5.xls	2114	2108	77,811,69 9

- Case 0an: Used to calculate breakeven prices for the Base Year 2015, assuming the RHB expense is the lower amount assumed for 2021 ($6.5 billion)
- Case 7n: Used to calculate the breakeven prices for 2021, assuming the base case 2021 volumes (see Appendix C), a $6.5 RHB, and a 2.0% CPI increase from 2015-2021
- Case10n: Our Base Case - Used to calculate breakeven prices for 2021, assuming the base case volumes, a $6.5 billion RHB, 2% CPI, and no Exigent Revenue ($2.1 billion) in 2015 or after
- Case12n: Sensitivity analysis using the base case assumptions but with a 3% cumulative TFP increase from 2015-2021
- Case 13n: Sensitivity analysis using the base case assumptions but with a 3% cumulative TFP decrease from 2015-2021
- Case 14n: Sensitivity analysis using the base case assumptions but with no Competitive product volume growth from 2015 to 2021
- Case 15n: Sensitivity analysis using the base case assumptions but with no Competitive product volume growth from 2015 to 2021 plus 15% lower First-Class volumes in 2021

Appendix C
Base Case Volumes for FY2021

The product categories and FY2021 volumes used in the base case model runs are given in Table C-1 and the attached Excel Workbook "Volume Calculations for Appendix" in Tab "Base Case Volumes". The derivation of these volumes is given in Tab "Sequence of Volume Projections" and the following description.

The study team searched extensively for updates to the original Boston Consulting Group (BCG) estimates of FY 2020 volumes but found none. Based on recent actual volumes in the major product categories, it was determined that the BCG estimates could not be used. First-Class products are not dropping as rapidly as estimated, Standard has grown more than projected and Competitive product volumes have expanded much more than anticipated. See Table 5.1 in the main report. Consequently it was necessary to develop new estimates for FY 2021. The type of industry survey used by BCG to estimate future trends was beyond the scope of this study. To provide a reasonable analytic basis for estimates, projections from regression of recent year volumes were used. After exploring different regression techniques, linear projections based on the volumes of FY 2014, FY 2015 and FY 2016 were adopted as a starting point for capturing recent developments in the postal and logistic industry that have been heavily influenced by the explosion in internet shopping. Adjustments were then made to remove some anomalies and adjust what was thought to be an unsustainable growth in selected competitive products.

The results of this process are given in the attached workbook "Volume Calculations for the Appendix, Tab "Sequence of Volume Projections". Column A gives the major product categories from Revenue, Piece and Weight (RPW) reports filed with the Postal Regulatory Commission (PRC) used in projecting volumes. Columns F through J gives the volumes reported for FY 2012 through FY 2016, with FY 2016 being the updated volumes from the Postal Regulatory Commission Annual Compliance Determination Docket. The total Market Dominant, Competitive and International mail from the linear projections for FY 2021 used as inputs for the model runs for this paper is 163.7 billion pieces

Column E gives the result of using the Excel Linear Trend function to estimate 2021 based on FY 2014, FY 2015 and FY 2016 RPW volumes. As can be seen, some projections give negative volumes (especially, Standard Parcels, Standard Post Mail, Collect on Delivery) and Post Office Boxes and Standard Carrier Route were considered unreasonably low. Thus, these were adjusted by using 97 percent of the 2016 volumes for these five categories, which better matches the change in First-Class and Standard mail over this period. The overwhelming beneficiary of this adjustment is Carrier Route, which increases by about 5.5 billion pieces. But this is considered reasonable given the important role Carrier Route mail has had in Postal Service delivery volume history. The linear projections of Domestic Negotiated Service Agreement (NSA) mail are also very negative but were set to zero due to the limited and decreasing role of Market Dominant NSAs. For instance there was no volume for First-Class NSAs in FY 2015 and FY2016. There was one Standard NSA operating in FY 2015 that may expire before FY 2021. Also, there is not a separate NSA product category in the model inputs. The negative values projected for some international products are small negative volumes and subsumed in international as a volume input category in the model, so are not adjusted. Column D gives the results of the adjustment with the adjusted figures shaded in yellow.

Column D is viewed as an upper bound since it reflects the explosive growth in Competitive products, especially Parcel Select and Delivery Confirmation. A judgmental adjustment is made to the growth rate for Parcel Select and Delivery Confirmation because they are not likely to be sustained over the next 5 years given the entry of Amazon into the delivery market and the UPS adding Saturday as a delivery day for many residential customers. In fact, the USPS estimates in the FY 2017 Integrated Plan that Shipping Services will only grow by 7.8 percent in FY 2017, of which Parcel Select is the largest component. To account for the fall off in growth, the linear estimated values for Parcel Select and Delivery Confirmation were adjusted by a factor of 75%. The results are given in Column C and the changes shaded in yellow. This becomes the base case using RPW categories.

Column B gives the FY2021 volumes by product categories used as model inputs. For the most part the model uses as volume inputs are the same categories as the RPW categories, but a few RPW categories are combined for use in the model. Delivery Confirmation, Return Receipts,

and Other Domestic Ancillary Services are combined for model inputs into the category Other Ancillary Services. All the International entries are combined into a single International category and the RPW line entries set at zero in Column B. These affected products are shaded green in Column B.

The entries actually used in the study are extracted from Column B of the Tab "Sequence of Volume Projections" and presented in Tab "Base Case Volumes".